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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,384	01/15/2004	Michael P.C. Watts	P78/MII-38-20-03	5448

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EXAMINER

RAO, G NAGESH

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/758,384	Applicant(s) WATTS ET AL.	
	Examiner G. Nagesh Rao	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12/07/05.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*Drawings*

- 1) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “30” of figure 5 has been used to designate both wafer and imprinting layer. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
- 2) The drawings are objected to because Figures 6A and 6B contain a reference numeral 44 which is not properly disclosed in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3) Claims 1-4 and 6-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Chou (US PG Publication 2004/0036201 A1) which has support from a provisional application 60/382,961 filed on May 24, 2002 (Documents included to substantiate support).

Applicants claim a patterning system comprising a bifurcated heat transfer mechanism having a surface and a source to direct thermal energy toward said bifurcated heat transfer mechanism, with said bifurcated heat transfer mechanism collecting said thermal energy and conducting said thermal energy to said surface.

Chou 201 clearly shows in Figures 2 and 7 a substrate (20) and a conductive layer (23) which one would construe as a bifurcated heat transfer mechanism, considering what is understood from applicant's specification, that a bifurcated transfer mechanism is comprised primarily of an absorption layer and a wafer. Examiner notes that the substrate (20) reads on a wafer and the conductive layer (23) reads on as a type of absorption layer, which down the line with respect to the dependent claims takes care of claimed language. However claim 1 is clearly read on by Chou 201.

Furthermore said read on bifurcated transfer mechanism of Chou 201 is capable of developing a localized heat source proximate to said surface. As well there would a system further including a mold (10) positioned between said source

(being the radiation means) and the bifurcated heat transfer mechanism. Wherein said bifurcated heat transfer mechanism is capable of being either disposed or removable within said system.

Finally Chou 201 teaches an imprinting layer (22) that is positioned between said mold (10) and the conductive layer (23), which is part of the bifurcated heat transfer mechanism (See Sections 0027-0028, 0031, 0038).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4) Claims 8-9, 11-13, 14-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US PG Publication 2004/0036201 A1) which has support from a provisional application 60/382,961 filed on May 24, 2002 in view of Chou (US PG Publication 2005/0037143 A1) which has support from a provisional application 60/477,161 filed on June 9, 2003.

From the aforementioned Chou 201 teaches the elements of a patterning system that is comprised of a bifurcated heat transfer mechanism. However although Chou 201 teaches in Section 0031 that the source of thermal energy can be from light, heat, or RF radiation, it fails to explicitly teach the use of a wavelength discriminator in conjunction with the source of radiation.

Chou 143 which also pertains to a patterning system for imprint lithography, teaches the use of a wavelength discriminator in conjunction with a thermal conduction put forth on the mold, film, and substrate layers as discussed in Sections 0052-0056 and shown in Figure 2, the discussion of a scattered light component clearly reads on the teachings of a wavelength discriminator. Examiner would like to note, that applicants never contended such position, and thus it is understood by examiner that such argument was with weight and applicable against applicants art.

Therefore it would be obvious to one with ordinary skill in the art at the time of the invention to decidedly include a wavelength discriminator component of the sort to either impart selectively or measure selectively varying wavelengths of light source imparted on the patterning systems mold portion to determine how much energy one would want to put forth and be able to control at least one parameter of the imprinting.

5) Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US PG Publication 2004/0036201 A1) which has support from a provisional application 60/382,961 filed on May 24, 2002 in view of Akutsu (US Patent No. 6,344,301).

From the aforementioned teachings of Chou 201 there is a patterning system that reads on applicant's claimed invention. However Chou 201 fails to teach that the conductive or as claimed absorptive layer is comprised of black carbon.

In a system pertaining to photolithography exposure and printing, Akutsu 301 teaches that it would known to use a black colorant such as black carbon as a conductive thin film for energy absorption (See Abstract, Col 6 Lines 34-68, Col 10 Lines 1-68 and Col 11 Lines 1-15).



Thus it would be obvious at the time of the invention to one with ordinary skill in the art to modify the teachings of Chou 201 with Akutsu 301 to take advantage of an energy absorptive property as displayed by black carbon.

6) Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US PG Publication 2004/0036201 A1) which has support from a provisional application 60/382,961 filed on May 24, 2002 in view of Chou (US PG Publication 2005/0037143 A1) which has support from a provisional application 60/477,161 filed on June 9, 2003 in further view of Akutsu (US Patent No. 6,344,301).

From the aforementioned teachings of Chou 201 and Chou 143 there is a hypothetical patterning system that reads on applicant's claimed invention. However Chou 201 and Chou 143 both fail to teach that the conductive or as claimed absorptive layer is comprised of black carbon.

In a system pertaining to photolithography exposure and printing, Akutsu 301 teaches that it would known to use a black colorant such as black carbon as a conductive thin film for energy absorption (See Abstract, Col 6 Lines 34-68, Col 10 Lines 1-68 and Col 11 Lines 1-15).


Thus it would be obvious at the time of the invention to one with ordinary skill in the art to modify the teachings of Chou 201 and Chou 143 with Akutsu 301 to take advantage of an energy absorptive property as displayed by black carbon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GNR

  
ROBERT DAVIS  
PRIMARY EXAMINER  
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2/24/06